CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.15/KRIDL/GSB-I/GR/2014-15 Date : 13.10.2014

GRADATION FOR GSB-I (CLOSE GRADED)
IS: 2720 (Part 4)

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of work : Improvements and Asphalting to Kuvempunagara and Prashanthnagara Main Road in Dasarahalli in Ward No.15, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014

Date of Testing : 13.10.2014

Sample Source : GSB Mix Plant Bangalore. **Oven Dry Wt (gm) :** 25700

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Specified Limits
75.0	0	0	0.00	0	100
53.0	980	980	3.81	96.19	80-100
26.50	6455	7435	28.93	71.07	55-90
9.50	4680	12115	47.14	52.86	35-65
4.75	3365	15480	60.23	39.77	25-55
2.36	2280	17760	69.11	30.89	20-40
0.425	4575	22335	86.91	13.09	10-25
0.075	2175	24510	95.37	4.63	3-10
PAN	1190				
Total	25700				

Remarks: Satisfies MORTH Specifications as per Table 400-1, Grading I

Note:

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3. Any Query regarding the report must be reported within 30 days from the date of testing.

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Job No.: CTCE/BBMP/W.No.15/KRIDL/WMM/Gradation/2014-15 15.10.2014

GRADATION FOR WMM
MORTH TABLE-400-11

Client : **Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.

Agency : **Technical Manager (West),** KRIDL, Bangalore.

Name of Work : Improvements and Asphalting to Kuvempunagara and Prashanthnagara Main Road in Dasarahalli in Ward No.15, BBMP, Bangalore.

Reference : BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014

Date of Testing : 15.10.2014

Material : WMM

Sample Location : WMM Mix Plant Oven Dry Wt (gm): **26000**

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	990	990	3.8	96.2	95-100
22.4	6150	7140	27.5	72.5	60-80
11.2	5475	12615	48.5	51.5	40-60
4.75	4320	16935	65.1	34.9	25-40
2.36	3285	20220	77.8	22.2	15-30
0.600	2250	22470	86.4	13.6	8-22
0.075	2145	24615	94.7	5.3	0-8

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Building & Highway Material Testing Laboratory

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Job No.: CTCE/BBMP/W.No.15/KRIDL/BM/Bitumen/2014-15 27.10.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

As Per IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements and Asphalting to Kuvempunagara and Prashanthnagara Main Road in Dasarahalli in Ward No.15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Roads in Kuvempunagara W.No.15
DATE OF TESTING	27.10.2014

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482.5	482
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	17.5	18.00
7. Bitumen content in %	3.50	3.60
8. Average	**3.55**	

Note:

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Job No.: CTCE/BBMP/W.No.15/KRIDL/BM/Bitumen/2014-15 27.10.2014

GRADATION DETERMINATION OF BITUMINOUS MACADAM MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements and Asphalting to Kuvempunagara and Prashanthnagara Main Road in Dasarahalli in Ward No.15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Roads in Kuvempunagara W.No.15
DATE OF TESTING	27.10.2014

CIVIL ENGINEERING TESTING LABORATORY

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	34.58	7.17	7.17	92.83	90-100
13.2	128.2	26.57	33.74	66.26	56-88
4.75	223.6	46.34	80.08	19.92	16-36
2.36	52.47	10.87	90.95	9.05	4-19
0.3	9.58	1.99	92.94	7.06	2-10
0.075	4.26	0.88	93.82	6.18	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	36.36	7.54	7.54	92.46	90-100
13.2	123.7	25.66	33.21	66.79	56-88
4.75	215.7	44.75	77.96	22.04	16-36
2.36	56.94	11.81	89.77	10.23	4-19
0.3	12.47	2.59	92.36	7.64	2-10
0.075	6.28	1.30	93.66	6.34	0-8

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CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

Job No.: CTCE/BBMP/W.No.15/KRIDL/BC/Bit/2014-15 28.10.2014

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX AS PER IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements and Asphalting to Kuvempunagara and Prashanthnagara Main Road in Dasarahalli in Ward No.15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Roads in Kuvempunagara W.No.15
DATE OF TESTING	28.10.2014

CIVIL ENGINEERING TESTING LABORATORY

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	474	473.5
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26	26.50
7. Bitumen content in %	5.20	5.30
8. Average	**5.25**	

Note:

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GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

AS PER IS2386 & IRC:SP:11-1984

CLIENT	**Asst. Executive Engineer,** T. Dasarahalli Sub Division, BBMP, Bangalore.
AGENCY	**Technical Manager (West),** KRIDL, Bangalore.
NAME OF THE WORK	Improvements and Asphalting to Kuvempunagara and Prashanthnagara Main Road in Dasarahalli in Ward No.15, BBMP, Bangalore.
REFERENCE	BBMP/DZ/AEE/TDSD/PR/2014-15 Dated: 06.10.2014
SAMPLE I/D	Roads in Kuvempunagara W.No.15
DATE OF TESTING	28.10.2014

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	474	
19	0	0	0	100	100
13.2	41.63	8.78	8.78	91.22	79-100
9.5	37.52	7.92	16.70	83.30	70-88
4.75	84.52	17.83	34.53	65.47	53-71
2.36	96.58	20.38	54.91	45.09	42-58
1.18	42.15	8.89	63.80	36.20	34-48
0.6	36.27	7.65	71.45	28.55	26-38
0.3	23.15	4.88	76.33	23.67	18-28
0.15	34.28	7.23	83.57	16.43	12-20
0.075	45.26	9.55	93.11	6.89	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	53.69	11.34	11.34	88.66	79-100
9.5	35.48	7.49	18.83	81.17	70-88
4.75	73.12	15.44	34.27	65.73	53-71
2.36	93.24	19.69	53.97	46.03	42-58
1.18	46.58	9.84	63.80	36.20	34-48
0.6	35.23	7.44	71.24	28.76	26-38
0.3	26.87	5.67	76.92	23.08	18-28
0.15	36.25	7.66	84.57	15.43	12-20
0.075	47.12	9.95	94.53	5.47	4-10

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